

S C I E N C E E D I T I O N

More power equals less land in James Bay

On Wednesday, January 6th, Premier Robert Bourassa announced the sale of 17 billion dollars worth of hydro electricity over a twenty year period to the state of New York. Having signed the agreement with Governor Cuomo he said, "It's a great moment of economic pride."

by Mathew Copas

But for the native population and environmentalists, this latest in a series of sales will bring little joy.

In April of 1971 Bourassa announced plans at a political convention for the massive James Bay hydro-electric energy project. Until that time, no one had consulted the native population, mostly Cree and Inuit. Neither had any studies been done that examined the potential environmental effects.

The first stage of what is envisioned to be a three stage project has now been finished. The Grande river has been exploited to its maximum potential and construction is in process on the second phase of James Bay. In the first phase the well-being of native populations, animal habitats and forests and were adversely affected. Unforeseen (but perhaps predictable) health related problems, such as the rising level of methyl mercury in the waters, were given little consideration.

Last year an additional 18.6 billion dollars worth of hydro power was sold to Vermont and 15 billion to Central Maine Power. The hydro sales bring us a step closer to construction the second part of James Bay, one of the key points of Bourassa's political agenda. Construction on this phase, expected to cost roughly 25 billion dollars, has already begun.

There is a common perception that hydro energy is clean and does relatively little environmental damage. This belief has in part enabled the rapid approach of James Bay II to have met with comparatively little public opposition.

There is increasing criticism that environmental concerns play little importance in the development of hydro power. Recently, four scientists at the Federal Department of Fisheries and Oceans, Freshwater Institute in Winnipeg, published a book on the subject. In *Canadian Aquatic Resources*, they contended that governments make decisions with little regard to environmental factors.

One of the scientists, D. M. Rosenberg, said that there is little evidence to indicate that environmental studies are seriously in-

tended to influence the decision to proceed with a project or not. They also rejected the idea that hydro-electric power is clean and that water flowing freely into the sea is a wasted resource. "Nothing could be further from the truth," they said.

The often light-handed treatment of the adverse affects of James Bay I gives weight to their argument. They found that in a 1972-79 Environment Canada report, the potential environmental effects tended to be viewed in an off-hand manner.

The report made remarks that were at times contradictory. At one point it said that, "One knows little about environmental factors that could upset the ecological marine balance. Even minor hydrologic changes can bring about long term changes. Marine animals will not tolerate large changes in water salinity and in temperature." The report went on to conclude that James Bay's hydro-electric potential should be exploited to the maximum. It doubted that "development will profoundly influence the biological characteristics of James Bay."

Environmentalists complain that no major study has yet been done of the environmental effects of phase one. On February 16th, 1987, Harvey Mead, a spokesperson for a Quebec environmental group, said that there should be an over-all study on the environmental impact of phase one. "We've been trying ever since 1978 to get a public debate on energy," he said.

At that time, Bourassa said that he had every right to develop James Bay II because it was part of his election mandate. Mead also accused the provincial government of irresponsible spending, claiming that James Bay II will represent an investment of \$12,000 per family. Bourassa brushed off environmentalists' concerns, responding that "Some of their arguments were so stupid it was difficult to take them seriously."

In the 1972-79 Environment Canada study, a number of environmental characteristics were discussed. The impact of large scale development on the environment was not yet understood. It said, for instance, that the Eastman river will be strongly affected by works of derivation and that the "quality of water would be modified.... It is impossible to measure the real impact of these developments."

Little attention was given to the possible decomposition effects that flooding would have on rivers, lakes and forest beds. Since that time, a number of environmental

concerns have arisen that were "impossible to measure." The activation of methyl mercury (a toxic chemical already present in the shield) has harmed the health of the fish population and, in turn, the human and animal populations.

There are roughly 8,000 Cree in the 360,000 square kilometer James Bay region and their economic and general well-being depend heavily on hunting. There are also a number of Euro-Canadian trappers whose livelihoods have been, and will be, harmed by development. Already, a large number of hunters have lost at least part of their territory through flooding. According to Colin Scott, a McGill anthropology professor, "Every square inch of land is in someone's hunting territory."

The study notes that there is a large variety of aquatic life which is "greater than originally anticipated." The lakes are full of phytoplankton, algae and unicellular organisms. These organisms form

the base of the food chain, and are later consumed by other animals. Large numbers of zooplankton also exist. These form an important link between the producers (algae) and secondary consumers (large vertebrates and fish). Zooplankton are easily susceptible to hydro development because they cannot battle currents.

Macrovertebrates, visible to the eye and occupying diverse levels in the food chain, are also evident. They depend greatly on the base

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ENGINEERING BLOOD DRIVE -- MONDAY TO FRIDAY THIS WEEK McCONNELL ENGINEERING

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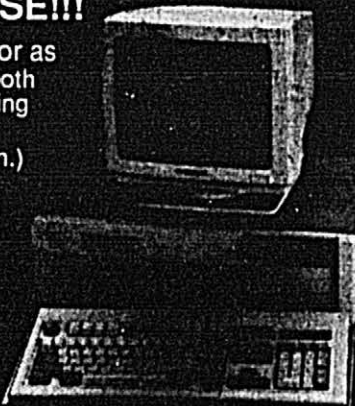
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events

Today

Project Ploughshares: meeting—all welcome. Union B09/10 at 17h00.

McGill Go Club: Regular meeting to play Wei-ji. 18h30, Union B09, novices welcome.

Gays and Lesbians of McGill: Film night/coffee house. Come see *My Beautiful Laundrette* at 20h00 in Union 425/26. More info: 398-6822.

Undergraduate Library: tour it while it exists. 13-14h00 and 17-18h00 at Redpath reference desk. More Info: 398-4750.

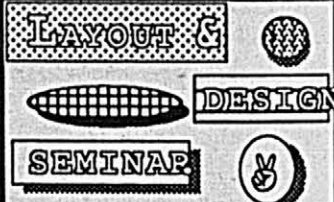
NDP-NPD McGill: Policy discussions on university financing, equal distribution of work, and new technology. 17h00 in Union 310.

McGill Outing Club: General meeting, 19h30 in Leacock 232. More info: 398-6817.

Native Affairs Committee: open meeting to plan Native Issues Day. Union 425-26 at 15h00.

McGill Masters of Nursing Colleagueship: "Nursing Power and Potential", Charles Martin theatre, 3655 Drummond, McIntyre Med. Building. More info: 844-5723 or 845-1908.

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Education for a greener future

by Alison Hunter

Ecological agriculture which offers lower costs for farmers and less environmental damage just may be the furrow of the future. Macdonald College is now designing one of the first programmes that offer this new technique.

"It will be a general degree, like the B.Sc. in general agriculture," said Stuart Hill, director of the Ecological agriculture (EA) project. "It's a futuristic degree because it emphasizes values that are not currently dominant in our society," he added.

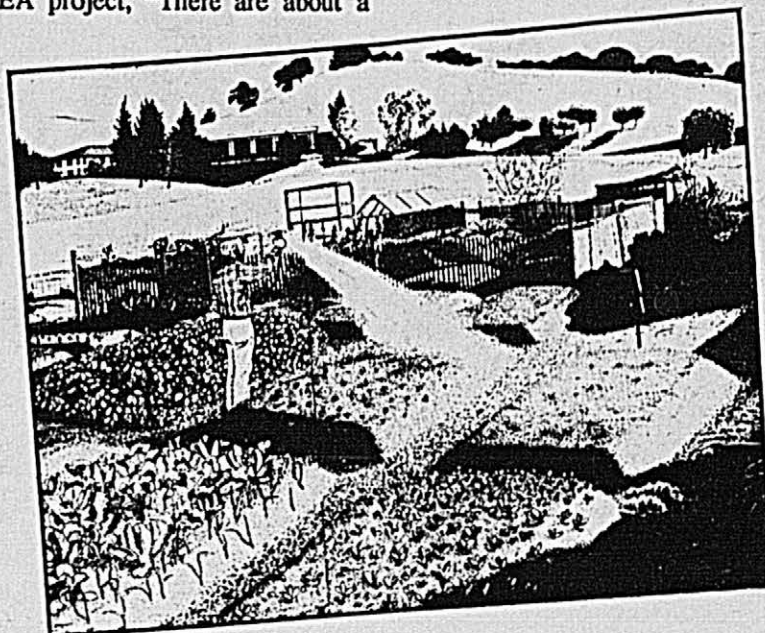
Traditionally, farmers have focused on achieving high yields but at the cost of environmental damage. Trends such as increased mechanization, uniformity of crops, and higher inputs of chemical fertilizers and pesticides have all seriously harmed the ecosystem.

The EA approach replaces fertilizers, pesticides and fossil fuel inputs with knowledge and skill. Prevention of pest problems and sustainability are emphasized rather than the treatment of symptoms and short term profits.

Organic farming is more profitable than conventional farming

because fewer costly chemicals are involved. According to Rod MacRae of Macdonald College's EA project, "There are about a

"Agronomy degrees do not provide the training and knowledge required. We are trying to encour-



thousand organic farms in Canada, but the number is rapidly growing."

Yet, there is an unfortunate shortage of specialists in this field, according to Jean Boutin of the *Mouvement pour l'agriculture biologique nationale*. Few schools of higher education offer EA programs.

age institutions to include agro-ecology programs in their curricula," said Boutin.

The government presently has few programs directly involving EA, but they are expanding. EA graduates can hope to find employment as government extension

agents, product graders and inspectors traditionally open to agronomists. (Extension agents act as a liaison between researchers and farmers, to introduce new techniques). "EA is infiltrating the system through the back door," said MacRae.

Most of the program's graduates are expected to be farmers. Other graduates might teach at one of the few CEGEPS which offer EA courses, work for organic farming support groups, or for private ecological research groups (mostly in the United States).

With sufficient capital and confidence, graduates could also open "natural" food stores, processing plants, wholesale outlets or organic bakeries. These types of work require initiative as well as a firm commitment to an ecological philosophy.

The *Mouvement pour l'agriculture biologique* is a support group for organic farmers. They lobby the government, certify farms, have education programs, and publish a magazine called *Humus*. You can write to them at 4545 Pierre de Coubertin, Montreal.

hyde park

Forum on sexism in language

"One small step for 'man', one great leap for 'humankind'," the saying might go for gender neutral language.

Many people at McGill however, don't seem to be prepared to make some simple substitutions in

their vocabulary for the sake of those of us who are alienated by "man" exclusive terms.

Why do these people insist on using 'man' instead of 'humanity'? Why the complaints about the substitution of 'manpower' with 'workforce' or 'labour'?

In the Women's Union letter about gender neutral language, they said, "language is powerful. It reflects and reinforces the inequalities on our society."

Because of the interest that was shown, the Women's Union will be holding a forum on the controversial issues of sexism in language. It will be held Thursday, January 28 at 19h00 in Leacock 26.

The speakers at the forum will be:

• Sarah Westphal, a McGill English Professor, who will introduce the topic;

• Bina Freiwald, a Concordia English professor, who will speak about the history of sexism in language;

• Ina Fichman, a CBC journalist, who will speak about sexism in the media;

• Clea Notar, an editor of (F)lip, a feminist literary magazine, will speak about the creation of a woman's language;

• Linda Fisher, a philosophy professor at McGill, will speak about the philosophy of language;

• Elsa Sheider, an English professor at McGill will conclude with promoting non-sexist language; Mankind or Humankind, He or S/he?

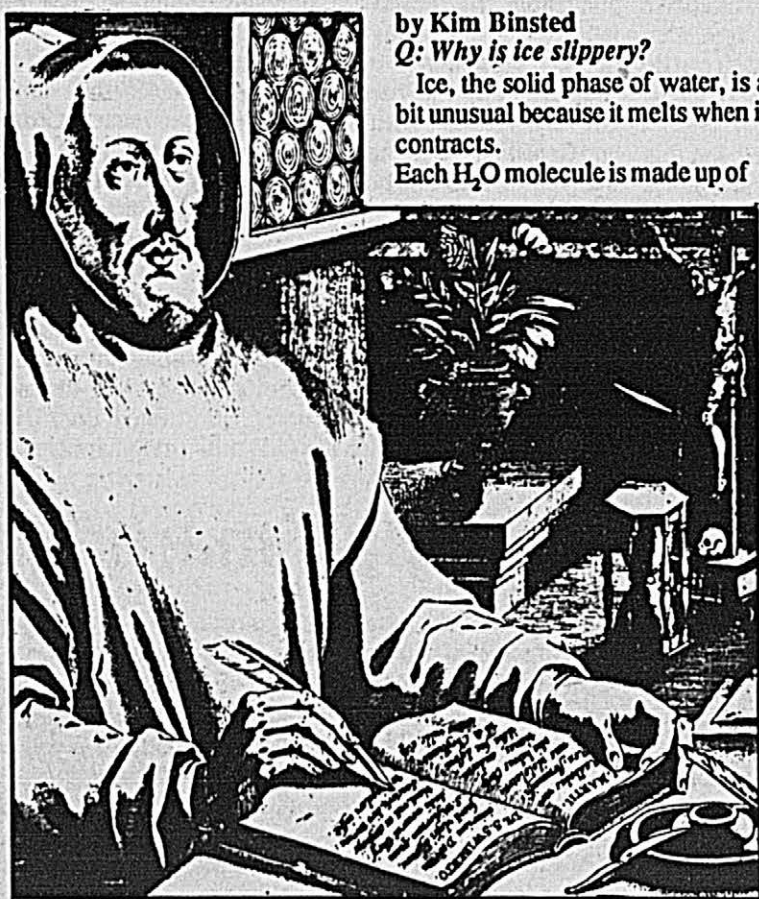
McGill Women's Union.

Return of the oracle

by Kim Binsted
Q: Why is ice slippery?

Ice, the solid phase of water, is a bit unusual because it melts when it contracts.

Each H₂O molecule is made up of



an oxygen atom with two hydrogen atoms about 100 degrees apart attached to it. When water freezes, six of these molecules join together to make a circle. (By the way, this is why snowflakes have a six-fold pattern). Because a circle of molecules takes up more room than single molecules, the frozen structure tends to break down when pressure is applied, and the ice melts.

Liquid water, which is a good lubricant, and ice, or any other smooth surface, make a very slippery combination. When you put your foot on ice, the pressure from your foot causes the very top of the ice to melt, creating a thin layer of lubricant which reduces the friction between the sole of your boot and the ice. Your feet can now slide easily across the ice and artfully out from under you, allowing you to sit down gracefully and gain a few bruises.

Q: What makes my nose turn red in the cold?

One of the most likely causes is that your body is trying to save your

nose from frostbite. When the body temperature starts to drop, blood flow to the extremities increases, keeping them warm. If any of the vital organs are threatened by the cold, however, the blood flow will drop in the extremities so that the more important body parts can be saved.

High blood pressure, alcoholism or a good punch can also cause a more permanent reddening. Delicate blood vessels in the nose swell or burst, and a delicate filigree of red will appear on the prominent organ.

Sunburn, a common complaint of skiers, is also a cause of rosy noses. When the skin absorbs too many ultraviolet rays, it literally burns, turning pinkish red. Because of its angle to the sun and frequent lack of protection, noses often sunburn in our sunny Montréal winters.

Finally, the most common cause of winter rednose is the common cold. Constant rubbing by Kleenex inflames the delicate skin of the nostrils, turning them red.

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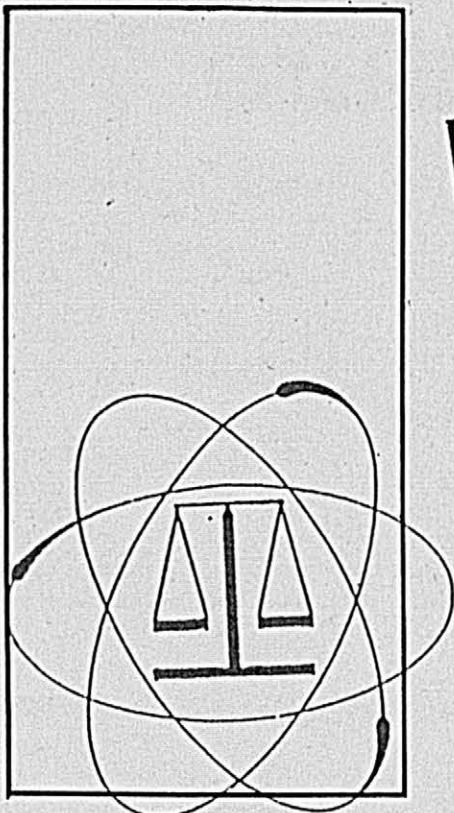
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Social responsibility in the Bronfman building?

Chemical weapons escalation:**Stockpiling for a yellow rainy day**

by Paul White

In the mid 1970's, the U.S. government's budget for biological weapons was about \$6-7 million. Now it is over \$60 million. In the same period the budget for chemical weapons has gone up over \$100 million.

The United States' involvement in the biological and chemical weapons controversy has a long and confusing history. In 1925 the U.S. participated in an international agreement called The Geneva Protocol. It banned the use of chemical and later biological warfare agents in wartime between signatory belligerents.

"It is important to realize that this was not an arms control agreement; it was more like rules for armed conflict that civilized nations would use when engaging in battle," said MIT graduate student in physics Tom Hsu. Hsu is currently on a committee studying the impact of the military on campus research and spoke last week at the McGill/MIT Student Pugwash Conference.

During World War II, the U.S. was feverishly developing chemical weapons. They were manufactured and then stockpiled for possible use at a later date. By 1969 the U.S. government had "stockpiled enough nerve gas (42,000 tons) to kill every human being on earth 5000 times over," said Hsu. At the same time, then U.S. president Richard Nixon unilaterally renounced the use of chemical and biological weapons and ordered the destruction of the U.S. stockpile.

"At this time it was perceived by the U.S. military that these weapons were not useful in a tactical sense. If you sprayed nerve gas on a battlefield both your troops and the enemy's had to respond to it and don the same cumbersome protective gear. Plus it was dangerous to stockpile," said Hsu.

The impracticality of these weapons helped prepare the way for the 1972 Biological Weapons Convention. This arms control agreement prohibits "the deployment, research or development

for offensive purposes of any chemical weapon, toxin or other biological warfare agent, except for prophylactic or protective purposes." The treaty was signed by 100 countries (including the U.S.) and remains in effect today.

In 1981 the Reagan administration commissioned a complete reassessment of the U.S.' ability to wage war on all fronts. "They found that it was becoming more useful and practical to be able to wage a chemical and biological war, especially with the development of genetic engineering technology," said Hsu.

This brings up the defence-offence dilemma. "There is a fundamental flaw in the present arms control agreement in that it allows the stockpiling, deployment, research and development of agents for defensive purposes," said Hsu.

But the distinction between defence and offence is controversial. "In a nutshell, ostensibly defensive research produces offensive capabilities; especially

when you believe true defence means anticipating the enemy's means of delivering the weapons. This leads to the scenario where, in the name of defence, one develops real deployable offensive weapons for the sole purpose of simulating what you think the enemy is going to do."

According to Hsu, the U.S. government is developing potentially offensive weapons which are expressly forbidden under international agreement. It can do this by calling the research purely defensive.

"This may sound far-fetched, but this is exactly what is happening, and this is the type of logic that the U.S. Department of Defense used to convince Congress to fund the development of these (chemical and biological) weapons," said Hsu.

The Reagan Administration claims that it is building up its chemical and biological warfare effort because of Soviet non-compliance to the 1972 Biological

Weapons Convention. The U.S. government claims that in 1978-79 the Soviets used tricothecene mycotoxins (a group of extremely toxic compounds produced by fungi) in Afghanistan, Cambodia and Laos—the so-called yellow rain controversy.

According to Hsu, "these are serious allegations, and would constitute a violation of the 1972 convention which the Soviets signed; but in 1982 Mathew Messelson, a biochemist at Harvard University, along with other American and Canadian researchers, demonstrated that yellow rain was nothing more than bee feces."

As late as 1986 the Reagan administration was asserting that the Soviets had cultivated bees, collected their feces and used it as a camouflage for chemical weapons.

Another incident which the U.S. mili-

tary claims is evidence of non-compliance to the 1972 convention. An outbreak of Anthrax (a bacterium) in the city of Sverdlovsk was pounced upon by the U.S. Secretary of Defense who claimed the outbreak was the result of a biological weapons facility," said Hsu.

He said that evidence to the contrary. "Prominent Soviet scientists who have no reason to believe (Soviet) government had an anthrax outbreak was due to contaminated meat supply," he said.

Spurred on by a perceived threat, the U.S. Administration is gunning to accelerate the biological and chemical weapons research according to Hsu. It has moved Fort Dietrich in Germany to its original site used for the

University and industry: an unhappy marriage?

by Mitu Sengupta

Students and professors from the Massachusetts Institute of Technology and McGill debated the role of industry in university research at a Student Pugwash conference last Friday at McGill.

University of Montréal professor Vaira Vikis-Freibergs said Canada's deficit could be partially explained by a lack of industry involvement in research. "To maintain the high standard of living we have in Canada, it is important to stop living off the fat of the land and develop industrially," she said.

MIT management professor John Parsons said, "To ensure better service to the society, it is important for industry to help finance scientific research. Industry is an important agent of the society," he added.

McGill Political Science professor, Sam Noumoff disagreed with

Parsons. "The primary source of funding must be the public purse, for we are serving the public, not a particular sector of it," he said.

Noumoff said that although all three speakers agreed that university should serve society, they differed on their concepts of the term 'service'.

According to Noumoff, industry's profit motive conflicts fundamentally with the university, as an academic institution's goals.

"University education provides students with more than just technical skills, it provides students with the ability to challenge," Noumoff said.

"The university is ultimately wealth-producing because it transforms society qualitatively and it provides creativity, flexibility and innovation," he added.

Noumoff said that university education is not an elitist concept but that it encourages change and promotes questioning.

"Industry, on the other hand, is not an agent of society," Noumoff said, "It is an agent of its own objectives."

Vikis-Freibergs said there are enormous ideological incompatibilities between the university and the 'world outside'.

"Academics often refuse to have anything to do with the outside world," she said. "University researchers should become aware that they can't go on living in an ivory tower and must interact more directly with society in order to serve it."

Vikis-Freibergs said private foundations and enterprises did not fund Canadian universities as much as they did in the U.S. "With the situation in Canada, it is important to have a marriage of convenience between the two," she said.

Parsons said, "on going contracts with industry have been important to the success of MIT."

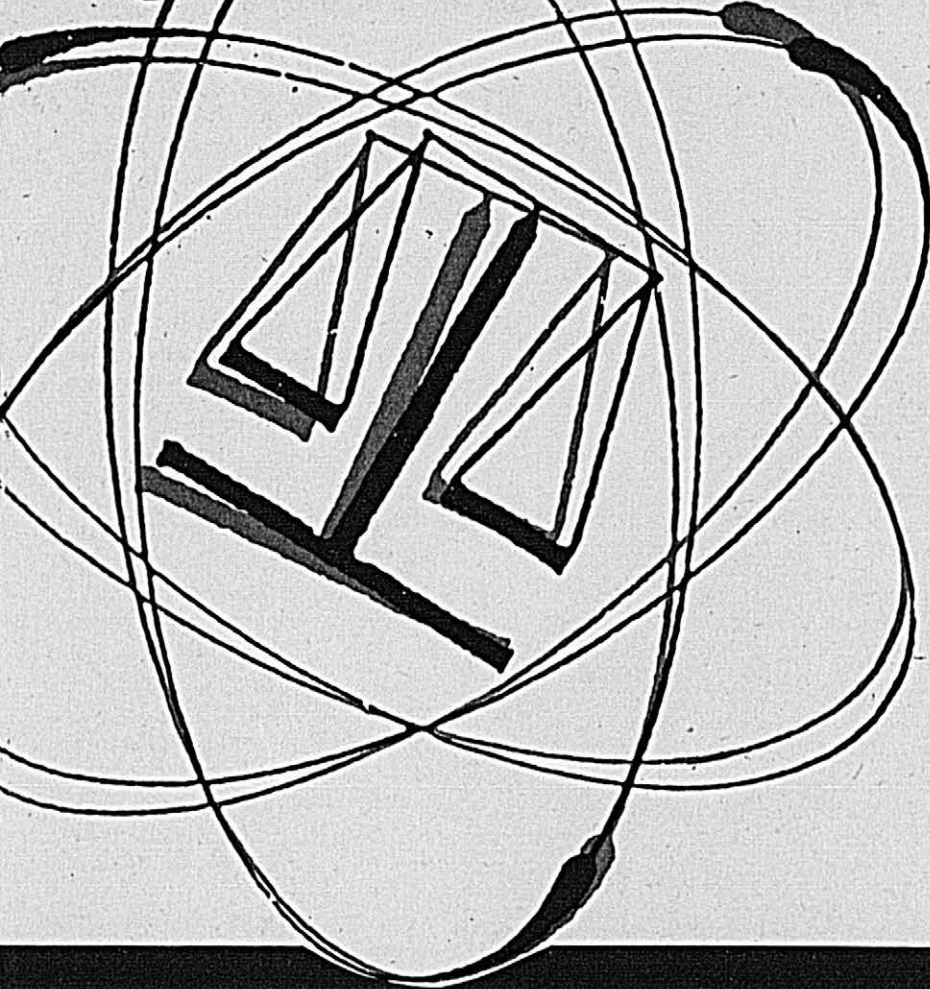
"I don't think that MIT is an appropri-

ate role model for McGill," he said. He said during the 1970s industries were the subject of student protest on U.S. campuses because of their involvement in nuclear production.

"Industry should encourage university research," Noumoff said. "Universities should not be like vocational training schools. Institutes of applied technology research should be established in the university, instead of separate funding. An exchange at that level could be achieved through seminars, conferences and meetings."

"It is important to realize that industry, industry is not the enemy," Noumoff said, "by letting industry involved in university research we are sacrificing the true nature of research." This is a democratic practice, according to the most important characteristics of universities.

T Pugwash conference



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perceived Soviet stration has be-development of al weapons, ac-recently reacti-Maryland, the development of

biological warfare agents in World War II. As well, the government is funding the construction of an aerosol testing facility and recently started re-manufacturing chemical nerve gas weapons, for the first time since 1969.

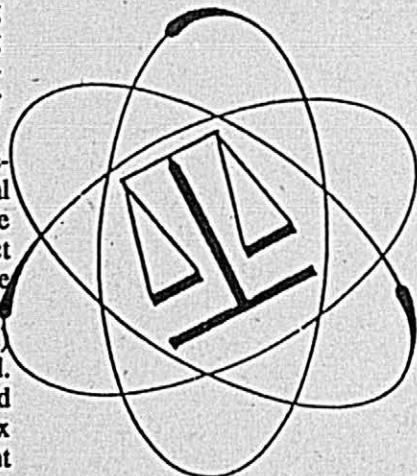
According to Hsu, some of the research into biological and chemical weapons is being done at MIT. "The committee studying the military impact on research at MIT came across some contracts to study tricothecenes (the same toxins implicated in yellow rain) being granted by the Army," he said. "We thought this was curious and indeed found that the Army has approved six research grants to five or six different scientists to study tricothecenes and aflatoxins (another potent group of toxins produced by fungi)."

When the administration at MIT was confronted with these facts, they claimed that the work was just food science research. Their argument was that all of these toxins are produced by fungi which grow on grains or other foods.

Hsu subsequently found that the Army research contract did not even mention food. "What it did mention was alleged Soviet non-compliance. It appears that MIT is engaged in lending the government credence to their allegations that the Soviets had violated the Biological Arms Control Treaty, when there is compelling scientific proof that they hadn't."

According to Hsu, "evidence that the Soviets are indeed developing and deploying biological and chemical is very fragmentary and by no means compelling. It is based on hearsay and I have in my possession a large body of evidence, from universities around the country, to the contrary."

At a time when there are such other pressing problems in the U.S. and Canada as the deficit and environmental destruction, the diversion of resources towards the development of chemical and biological warfare agents is a very bizarre phenomenon.



McGill and MIT students discuss the ethics of patenting life forms.

Le colloque de Pugwash:

Un programme pour le XXIe siècle

Isabelle Montpetit

La fin de semaine dernière, les groupes Pugwash de McGill et du Massachusetts Institute of Technology (MIT) tenaient un colloque à McGill pour discuter du rôle que les universités devront jouer au cours du siècle prochain. En effet, à cause de leur implication dans la recherche et de leur relative indépendance politique, les universités ont un rôle crucial à jouer dans le choix des moyens que notre société se donnera pour faire face aux problèmes auxquels elle sera confrontée.

Les conférences et les ateliers portaient sur deux thèmes principaux : les programmes de recherche controversés et les orientations à prendre en recherche et en éducation.

Plusieurs des discussions ont porté sur la recherche militaire. Lee Iverson, membre étudiant du Comité ad hoc sur la Responsabilité sociale dans la recherche à McGill, a expliqué qu'à McGill, l'armée ne subventionne pas de programmes complets mais accorde de petits contrats, parfois par l'entremise de compagnies privées. Cependant, comme on l'a vu avec les « Fuel Air Explosives », les travaux de certains chercheurs de McGill sont liés à la conception de nouvelles armes. Il semble qu'il soit impossible de savoir qui travaille en fait pour l'armée. Pour l'instant, la politique de McGill consiste à refuser les contrats de recherche dont les résultats ne seraient pas rendus publics. Cependant, le comité ad hoc doit bientôt présenter au Sénat et au Conseil des gouverneurs une résolution visant à donner à l'université le pouvoir de refuser des contrats de recherche dont les résultats prévus seraient socialement inacceptables.

de professeurs tente de convaincre l'administration du MIT de diversifier ses sources de financement de façon à ce que la recherche civile demeure prioritaire.

La discussion de ces thèmes s'est poursuivie au cours des ateliers où il a aussi été question du rôle de l'industrie à l'université.

Un des ateliers les plus populaires portait sur les problèmes éthiques reliés au fait d'accorder des brevets sur les organismes vivants. La discussion avec John Southin a mis en évidence le fait que la biologie s'apparente de plus en plus au génie et que la recherche appliquée pose désormais des problèmes auxquels nous devons réfléchir dès maintenant.

Samedi matin, une des conférences portait sur l'avenir de la recherche sur les femmes et le développement; une autre sur la façon de promouvoir la responsabilité sociale dans les programmes universitaires. Le programme de médecine de l'université de McMaster, décrit par Leah Norgrove, est un exemple intéressant d'une approche globale de la médecine qui considère la santé comme un problème à la fois d'ordre biomédical, comportemental et social. Les étudiants n'y ont ni cours, ni examens et leur apprentissage est basé exclusivement sur la pratique. « On y apprend à apprendre, ce qui sert toute la vie », disait Leah Norgrove. Malheureusement, « il y a un prix à payer » pour cette originalité : il semble que les étudiants de McMaster ont plus de mal à réussir les examens de la Corporation des Médecins axés sur l'aspect biomédical.

Finalement, M. Douglas Roche, ambassadeur du Canada pour le désarmement aux Nations Unies, a élaboré un programme pour le XXIe siècle dans son discours de clôture. Selon lui, nous devons attaquer de front les six problèmes suivants : la menace de destruction nucléaire, la dégradation de l'environnement, l'explosion démographique, le fossé entre les riches et les pauvres, la réforme de l'éducation et l'appauvrissement des valeurs morales. « Les années 80 ont été celles de la gestion de la cupidité, les années 90 devront voir l'élaboration d'une nouvelle éthique qui nous permettra de vivre ensemble en gardant notre dignité. »

Au MIT, comme l'a décrit Tom Hsu, certains programmes sont subventionnés à 90% par l'armée et, très souvent, les étudiants ne savent pas qui a donné le contrat sur lequel ils travaillent. De plus, pour les professeurs, il devient de plus en plus difficile de trouver des sources de financement autres que le Ministère de la Défense qui, entre autres, accorde de nombreux contrats reliés à l'Initiative de défense stratégique, la guerre des étoiles chère à Reagan. Un groupe d'étudiants et

Daily Photo - Justin Richardson

Recycling keeps the toxic slag down

by Sharon I. Forrest

The paper you are now holding may someday contribute to giving someone cancer. The *McGill Daily*, when you have finished reading it, will probably become part of Montréal's trash, 90 per cent of which ends up at the 17 year old Des Carrières incinerator on Plateau Mont Royal.

As this incinerator burns its daily quota of 1000 tons of unsorted garbage, it pours cancer-causing dioxins and heavy metals into the air. It also concentrates these substances in the slag left after burning.

But garbage can't just be left lying around in dumps.

Incinerators were thought to solve part of the problem by reducing garbage bulk. But often the volume is decreased only by 60 per cent, while the toxic slag eventually has to be buried.

With current dumping sites filling rapidly, and leaching toxic substances into the ground water, causing substantial contamination to nearby water sources, environmental activists are pushing recycling as the cleanest alternative to dumping and incinerating.

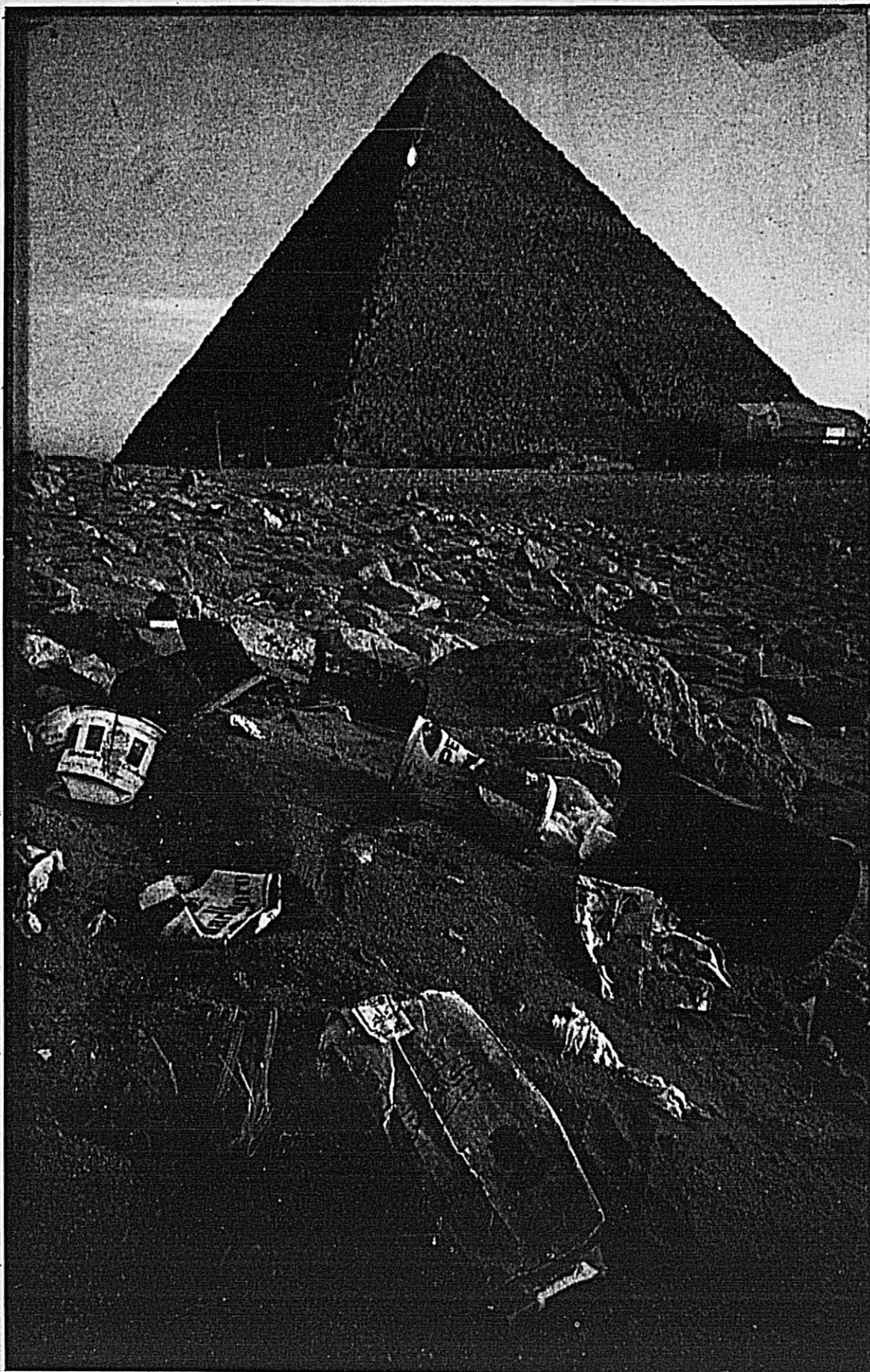
Heavy on the metals, dioxin too

Garbage incinerators are a major source of dioxin and heavy metal air pollution on the planet today. Dioxin is one of the most lethal artificial substances known. Half of one per cent of a drop of dioxin is fatal. As well as being a carcinogen, dioxin is related to the dysfunction of organs and depression of the immune system.

Incinerator stack emissions also include lead, cadmium, mercury and other elements which can cause cancer and other fatal diseases. "Anti-pollution devices" such as the electrostatic precipitator grab only the large particles present in a stack's emissions. They do not prevent invisible dioxin, heavy metal fumes, and acid rain—causing gases from being released into the atmosphere.

Emissions from the Des Carrières incinerator were tested in 1983 and found to be "safe." But according to Peter Monet, director of the film documentary *Toxic Cloud*, the criteria used for the tests were "shaky and the results conflicted with those found from similar studies done on incinerators all over the world." Analyses done in Europe and the US have shown that dioxins and heavy metals are major components of the stack smog.

The slag from the Des Carrières incinerator is transferred to a dump site near Rivière des Prairies. This slag contains high levels of dioxins and heavy metals in dangerous new



Trash can hang around here for a very long time.

post-incineration forms. They are often more water soluble and can leach into the ground water en route to our food chain.

Noses will fall off

"The MCM has proposed making the slag heap into a ski hill," said Monet. "This is dangerous to the point of the absurd." A ski hill made of incinerator slag would mean that skier's "noses will fall off."

Recycling projects, while not ignored, are given second or third priority. In 1987 for example, the City of New York spent one million dollars on recycling out of a waste management budget of three billion.

"In Montréal, four pilot recycling projects will get a few thousand

dollars while millions go to the incinerators," said Monet. "A lot of times there are successful recycling programs like Ottawa's Blue Box (a system of paper collection for recycling), but at the same time there are plans to build incinerators."

Convert incinerators to recyclers

"Realistically," said Monet, "Montréal could recycle about 75-80 per cent of its waste. It would be easy to convert the existing incinerators to recycling plants."

Monet and other members of the Québec Public Interest Research

Group (Q-PIRG) are presently preparing pamphlets and posters about recycling "to get people thinking in terms of total recycling"

Monet said many Canadians have a "frontier mentality, as part of the 'use it and throw it away philosophy,' adding that, 'Europeans have the same standard of living as North Americans, but they produce 1/2 the garbage.'

Once recycling plants are made available, "the next step is separation of garbage," said Monet, into

different groups, such as, dry (glass, paper, metals and plastic), compostable (food and lawn cuttings) and non-recyclable (aerosols, toxic chemicals).

Recycling works

Japan recycles up to 60 per cent of its waste and other countries are catching on as resource depletion and garbage build-up become a reality.

Successful recycling programs have started in Ottawa, while recycling organizations have started at universities such as Toronto, Waterloo, Victoria and Simon Fraser. At the University of Guelph, students protested against styrofoam wastage by piling all their cups in the middle of the cafeteria, creating a huge monument. Shortly afterward the local PIRG sold reusable mugs which entitled the owner to 10 cents off the price of coffee.

Recycling paper will be important for the switch to recycling, as incinerators need paper to maintain the burning process. In the conflict between recycling and incineration in Montréal, "whoever wins the paper battle is likely to win the garbage war," said Monet and Julien Feldman in a recent article in the *Montréal Mirror*.

Put your paper in the box

For the past eight years, McGill's branch of the Pulp and Paper Research Institute of Canada (PAPRICAN) has been recycling some of its paper. Everyday, a truck picks up two large boxes of waste photocopy and computer paper and takes them to a PAPRICAN branch in Pointe Claire where the paper is recycled.

"We have the capacity to accept more paper," said George Panciuk, purchasing manager of PAPRICAN, but he adds "we are very selective." McGill staff and students are welcome to drop off uncoloured paper and blank newsprint at PAPRICAN.

Project Ploughshares member David Shewchuk is in the process of starting a program to recycle all the paper from McGill's computer centres in the Leacock lab.

"We hope to expand to other campus computing centers before exam and assignment season begins," said Shewchuk. "Instead of putting the paper into trash bins," he said, "it has to be placed in boxes." Signs will show everyone where the boxes are. When half a ton of paper is collected, a truck from Agoral in Pointe aux Trembles will come and pick it up, paying 4-6 cents per pound. Money made from the program will "just cover operating costs," he said.

According to Shewchuk, the program will be inexpensive. "We don't need any money from the university, just a few people to put in a little time per week."

Ads may be placed through the Daily business office, room B-17, Student Union Building, 9am - 3pm. Deadline is 2pm two weeks prior to date of publication.

McGill students: \$3.00 per day; \$7.00 for 3 consecutive days; \$2.00 per day for more than 3 consecutive days. McGill faculty and staff: \$4.00 per day. Exact change only, please. Boxed ads are available at the cost of \$4.00 per ad / per day — no discounts on boxing.

The Daily assumes no financial responsibility for errors, or damage due to errors. Ad will re-appear free of charge upon request if information is incorrect due to our error. The Daily reserves the right not to print any classified ad.

341 - APTS., ROOMS, HOUSING

4 1/2, immediate, two months free rent. Adjacent Montreal West. Easy to get to downtown. Call 482-7209 or 486-2773.

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Roommate wanted, nonsmoker, to share a nice, clean, quiet 4 1/2 downtown. \$250. 933-8785.

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Roommate wanted to share 3 1/2. \$237.50/month, includes heat, electricity, water. Secured building, pool, laundry, 5 minutes from McGill. Available Feb 1. 848-9930 before 9am or after 6pm.

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Photographer requires attractive female models, for glamour, topless and nude figure studies. No experience necessary. Personality more important than previous experience. Call Ken after 7pm at 683-7881.

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354 - TYPING SERVICES

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Worship for a university community. St-Martha's in-the-basement, Sundays 10:30am, 3521 University. Information: Roberta Clare, Glynis Williams, Presbyterian/United Church Chaplains on campus, 398-4104.

Ski tuning — have an Ontario division racer (now a McGill ski team member) tune your skis for you. Waxing, P-texing, sharpening. Delivery and pick-up. Call Joshua at 848-9701.

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Bible study/discussion group meets around the fireplace at the Newman Centre. For information call Roberta Clare, 398-4104. Presbyterian/United Church Chaplaincy on campus.

Plants of all kinds — sale, rental, maintenance — for office or outdoors. Call Alex the landscaping specialist for consultation 389-7270, 324-3794.

Test anxiety group now forming at McGill Counselling Service. 6 weekly sessions to help you relax and concentrate on exams. Phone 398-3601 now!

Public speaking groups forming at McGill Counselling Service. Freeze up when you want to participate in class? Got "seminar presentation jitters"? Phone 398-3601 now!

Assertiveness training workshop at Counselling Services - 5 sessions - Thursday 28 from 9am to 10:30am. Powell Building #301. For information and enrollment call 398-3601.

361 - ARTICLES FOR SALE

Glossy black fur coat for sale. Simple style, \$150.00 negotiable. Fits most people, average size. Elizabeth, 849-4685, to try it on at McGill without obligation.

Science texts for sale: Biology 4th ed., Giancoli's Physics 2nd ed., Butler/Grosser's Relevant Problems 4th ed., Segal's Chemistry. Call Anik at 848-9471 or 845-6726.

Studying can be a pain in the behind, but it needn't be a pain in the back, neck, shoulders, etc. Try an ultra-comfortable ergonomic Balans chair. Contact Vitalité Illimitée 274-1012.

Sweat shirts \$19.99 [100% cotton], lumber jack shirts [100% cotton] \$19.99, US army work pants \$19.99, wind pants \$25, EXXA Military Surplus 550 President Kennedy.

Old McGill band jackets, capes, \$5. Pand pants \$2. Thursday, January 28, 1988. 5-7pm, Currie Gym Snack Bar.

367 - CARS FOR SALE

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370 - RIDES

Québec City Party Bus: Saturday Feb 6 & 13. Departure 11am, return 2am. Carnival includes: Parade, fireworks, ice sculptures & le Bonhomme. \$24.95 at Sadie's and residence deparneur.

372 - LOST & FOUND

LOST — eyeglasses, about two weeks ago somewhere between Adams Aud. and the Alley. If they aren't returned soon, I'll loose my deposit on the white stick. 848-0535.

FOUND — mittens, 2nd floor Arts in desk. Dark blue and white patterned. 848-0535.

374 - PERSONAL

Foreign student seeks Canadian woman to do an urgent favor. Appreciation available. Please call Mike 939-0572.

Josie! Nicole Bernier! Help. Laura has lost your number. Phone 845-5689.

Seeking excitement and new friends! Visit the members of Delta Upsilon Fraternity at 522 Pine. Meetings and Rush dinners, every Monday at 6pm. Phone: 845-4050.

Gay Sociology student seeks sexually active gay males to interview for honours thesis. David, 482-5815.

Feeling lonely, sad and blue? McGill Nightline is here for you! 7 days a week; 6pm 'til 3am; 398-6246.

Go to hell!! RVC heaven and hell party 1988. 3425 University St, January 29, 9pm-3am. Featuring: Purple Jesuses and Red Devil punch. Happy hour 10-11pm & 12-1am.

Alpha Omicron Pi women's fraternity presents Band Night 88 on Saturday, January 30 at 9pm at Gertrude's Pub, featuring Comfakes, the Drones, and the Elementals. \$2 admission. Donations for Arthritis Foundation.

I'm preparing the evaluating medical examination of foreign medical schools for September 88, and I'd like to join somebody else to study. Please call Oscar 767-7200.

Alpha Omicron Pi women's fraternity welcomes all undergraduate women to attend AOPI's "Back in Black" dinner on Thursday, January 28 at 6pm, 3520 Durocher, 849-9266.

In the spirit of the dead: Do you live in Hartford? I desperately need tickets for the Easter concert. Can you help? Call Catherine - 598-9549.

383 - LESSONS OFFERED

French conversation courses (free): in exchange for English conversation. If you live close to a metro, send me a letter in French: CP 598, Succursale "R", Montréal, Québec, H2S 3L1.

385 - NOTICES

To all Political Science students: The Journal of Political Studies encourages your submissions. Deadline: January 31st. PSSA box, Lea 443. Include name, phone number and duplicate copy.

Philosophic Fragments invites all undergraduates to submit Philosophy essays for publication. Leave essays, with name and phone number, in PSA mailbox, Leacock 908.

Attention health care professionals. The Masters Nursing Collegueship presents: Nursing Power and Potential. Wednesday, 27 January, 7-10pm, Charles F. Martin Amphitheatre, McIntyre Medical Building. Admission \$3.00.

McGill New Age Society? If you are interested in putting some energy into this project, it can flourish and grow. Contact Curtis 274-1012.

387 - VOLUNTEERS

The Yellow Door is recruiting volunteers from the McGill community to visit elderly people living downtown or to accompany the same to appointments... contact Andrea Richardson, Services Coordinator for further information. 398-6243.

Take a break from the books and do something positive. A whole world of community service opportunities awaits you. McGill Volunteer Bureau. Union 414. 398-6819.

Volunteers needed for Positron Emission Tomography research at the Montreal Neurological Hospital. May require 2 days of your time. Remuneration \$60/day. Call 284-5830.

Come judge at McGill's Winter Carnival Debating tournament, January 30-31. Linda Frum said it is a must. No experience necessary. Sign-up Union Lobby.

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STUDENT I.D. OR COPY OF AD

Pioneer of modern medicine:**Curious Dr. Hunter**

by Douglas Dwyer

February 14 is renowned Scottish surgeon John Hunter's 260th birthday. While a skillful surgeon, he is remembered mostly for his novel, comparative anatomical and physiological studies of animals which remain his central contribution to medicine.

As a child, Hunter was considered by those around him to be "deficient in self-control, idle and ignorant." His curiosity was directed towards observing nature rather than learning classical works. He refused to let himself be "stuffed with Latin and Greek at the University."

His dislike of formal learning persisted, but as he grew older, he developed the necessary self-discipline to pursue a career in dissection and medicine. Hunter became a surgeon's pupil at St. George's Hospital in London at the age of 25 under his brother William. William persuaded him to try Oxford, but in

his true childhood form, Hunter dropped out after six weeks.

After a tour of duty as a Staff Surgeon in the British military, Hunter returned to London determined to establish himself as a practicing surgeon. His reputation as a collector and dissector of animals didn't contribute much to his advancement as a surgeon early on.

His brother William, always committed to his defence said, "Who then are the men in the profession that would persuade students that a little of anatomy is enough for a physician and a little more too much for a surgeon? God help them! They have it not themselves, and are afraid that others should get it."

Surgeons had not yet realized the great value of comparative anatomical studies for medicine. John Hunter, with the help of his brother, was instrumental in introducing this idea. Many London surgeons of the day were no doubt skeptical.

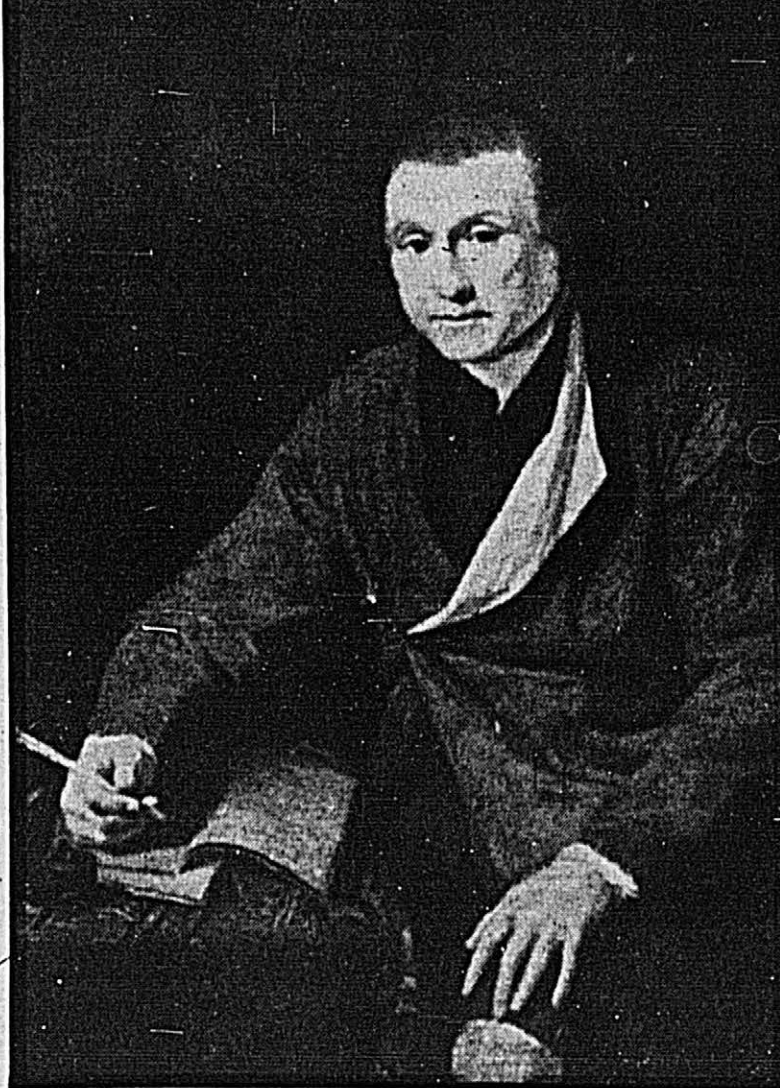
The thrust of Hunter's investi-

gations was practical rather than theoretical. Hunter's studies include a study of Gillaroo trout, of respiratory system in birds, as well as an account of auditory mechanisms in fish. He also wrote extensively about physiology in humans.

"Don't think, try; be patient; be accurate," he would say.

A biographer of Hunter's remarked: "Hunter probably never taught himself any of the rules of scientific study. He was one of the few men to whom the love of carefully observing the course of nature is sufficient for the motives and safe methods for scientific study."

Hunter's many years of patient work began to pay off for him in the later years of his surgical work. His experience dissecting arteries in the neck of a dog proved invaluable for finding the cause of aneurisms in the artery of a human leg. His impact upon medicine is immense. His spirit and approach towards difficult problems will not be forgotten.

**...Power and land**

continued from page 1

(sand, gravel, etc.) and, like zooplankton, on the speed of the current.

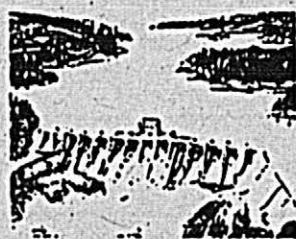
Some sixty thousand fish were sampled from the Grande and Eastman rivers. The size of fish depends greatly on the size of the lake, habitat of the river or lake, and the food available in them.

Changes in water area can also influence the climate. The James Bay project, in all three phases, will affect some 360,000 square kilometers of Quebec (an area larger than England). The construction of dams will ultimately flood roughly seven per cent of that area. The anticipated climatic change is no greater than two degrees for the air temperature and two per cent in the change of precipitation.

James Bay is also home to a large variety of waterfowl that includes ducks and geese. The bay is an important migratory station for both of these birds. Geese congregate on the coast near Fort George and rest in swampy areas of eel grass. A slight increase in water temperature can easily slow the growth of grass. According to Scott, "There are larger fumes now (fresh water tanning over salt water).... One of the changes that happens as a result of this is that tem-

perature changes result in eel grass not doing too well. That affects migratory geese that rely on eel grass as a staple.... Local concentrations of geese are lower."

Fauna in the James Bay region include lynx, foxes, wolves, muskrats, hares and beavers. The loss of beaver colonies is especially disturbing to Cree and Canadian hunters. There numbers are easily depleted because they feed off broad leaf willow trees found on the banks of rivers. The trees, and their habitats, are flooded out if the water level rises even slightly. According to Scott, "Beaver are particularly



heavily impacted by flooding, precisely because they occupy shoreline habitats. If a regime is shifting, a drop in water level for example, the beaver will be left high and dry and, if the water level rises they will be flooded."

Some other animals, like moose and caribou, are less heavily impacted because of their transitory

nature. But their numbers have also fallen, partly due to changes in water level that have disturbed their normal path of movement. Four years ago, several thousand drowned by flooding in such an occurrence. According to Scott, "It represents some economic loss and is very disturbing on a spiritual level to Cree hunters."

One of the most disturbing effects of hydro-electric development is the increase in methyl mercury levels. Methyl mercury is present in the shield at all times but, when the ground is upset, its levels increase.

According to Scott, hydro projects in northern Manitoba and Saskatchewan resulted in inevitable rises in methyl mercury levels in reservoirs and along diversion dams. In each of the three phases of the James Bay project, a number of these are projected.

"The same problem will be duplicated in phase two and three that occurred in phase one. That leads in some cases to levels of methyl mercury in fish that could put human lives at risk.... The reservoirs are flooding vast areas so you've got that decomposition going on.... There has been continuous monitoring in existing water courses, so that we know the level

of methyl mercury is relatively high in natural sources.... In the case of the phase one development, that has been accelerated. The public tends to jump to conclusions that sources are industrial. This is a problem because artificial flooding accelerated the process."

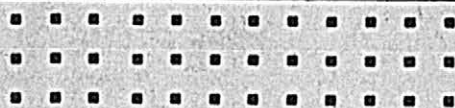
Native Canadians, frightened by the prospect of further development, oppose more James Bay projects. On April 10th, 1987, a group of Quebec's Attikamek and Montanais Indians told the National Energy Board that "The low cost of electricity and the plans for hydro-electricity exports to the U.S. are made possible in large part by our dispossession." A Cree official, Violet Pachanos, said "The James Bay power project has resulted in the indiscriminate destruction of animal habitat and grossly diminished wildlife population."

On November 2nd, 1975, the Cree, Inuit, and the Government of Quebec and Canada, reached a negotiated settlement. The James Bay and Northern Quebec Agreement creates a framework for the well-being of the Cree and Inuit. Among the stipulations of the

agreement were that: provisions be made to reduce the detrimental effects of hydro development; that provision be made to allow for the continuation of hunting; and that there be sufficient monetary compensation so that a fund could be created and protected for future generations.

How well compensated they will be is anybody's guess. On November 21st, 1974, Quebec justices ruled that the Cree only had the right to live on the territory. Assistance to them was only necessary on "moral grounds."

Native Canadians and environmentalists face the formidable task of opposing Bourassa's unbudging stance. His attitude that environmentalists' arguments are "stupid" is not unlike that expressed in 1971 when he proposed the project without conducting any environmental studies. Fueled by billions of dollars in "economic pride", the James Bay region is now on the threshold of more potentially destructive development. Without more public action, the native population and environment stand to be the losers again.



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NOTICE:

**DAILY PUBLICATIONS SOCIETY
BOARD OF DIRECTORS
MEETING**

**TUESDAY, FEBRUARY 2 • 4:30 PM
ROOM B-17, STUDENT UNION BUILDING
CONTACT JOEL • 398-6790**